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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,156

03/24/2006

Patrice Ouvrier-Buffet

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BRINKS HOFER GILSON & LIONE  
P.O. BOX 10395  
CHICAGO, IL 60610

EXAMINER

GREEN, YARA B

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,156	<b>Applicant(s)</b> OUVRIER-BUFFET ET AL.	
	<b>Examiner</b> Yara B. Green	<b>Art Unit</b> 2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/14/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claims 3 and 5 both recite the limitation "said converter". Claim 2, on which claims 3 and 5 depend, discloses a) converter for associating with an output voltage with an input current *and* b) a converter for associating an input voltage with an output current (Figure 3, elements 6 and 9). There is insufficient antecedent basis for this limitation in claims 3 and 5.
4. Claim 7 recites the limitation "said set of particle detectors". There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 1 and 6-9** are rejected under 35 U.S.C. 102(e) as being anticipated by Tumer et al.

(US PreGrant Publication 2003/0105397; filed November 9, 2001).

Re **claim 1**, Tumer et al. disclose a device for processing a detector signal (i) derived from a particle detector (para. 0079), said device comprising an integrator for measuring the total charge transported by an input signal feeding said integrator for a predetermined time interval (para. 0133), wherein said device further comprises a unit for reducing a fluctuating component of background noise present in said detector signal and for producing said input signal (para. 0090).

Re **claim 6**, Tumer et al. disclose a device for processing signals produced by a set of particle detectors **100, 101**, wherein at least one of said signals is processed by a means comprising a device according to claim 1 (para. 0083).

Re **claim 7**, Tumer et al. disclose the device according to claim 1, wherein particles detected by said set of particle detectors comprise photons (para. 0074).

Re **claim 8**, Tumer et al. disclose a radiology apparatus comprising a device according to claim 1 (para. 0074).

Re **claim 9**, Tumer et al. disclose an imaging apparatus comprising a device according to claim (para. 003, 0074).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 2-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tumer et al. (US PreGrant Publication 2003/0105397; filed November 9, 2001) in view of Lakshmikumar (US Patent No. 5,619,125; published April 8, 1997).

Re **claim 2**, Tumer et al. teach the limitations of claim 1, as mentioned previously and further teach the device according to claim 1, wherein said unit comprises a converter **133** for associating with an output voltage with an input current (para. 0056); and a threshold trigger **143** for allowing current to pass when said output voltage exceeds a first predetermined threshold value **142** and for preventing current from passing when said output voltage falls below a second predetermined threshold value **142** (para. 0083).

Tumer et al. do not disclose converting the output voltage back into an input current for the integrator. In the field of electric power conversion systems in circuits, Lakshmikumar teaches implementing a converter to associate an input voltage with an output current (col. 1, lines 21 - 36). One of ordinary skill would have been motivated to modify the circuit of Tumer et al. to include a voltage-to-current converter in order to output a current signal, as may be desired by the next segment of circuitry, such as an integrator.

Re **claim 3**, Tumer et al., as modified by Lakshmikumar, teach the limitations of claim 2, as mentioned previously. Tumer et al. further teach the device according to claim 2, wherein said converter comprises an amplifier **133** in parallel with a resistor **134** (para. 0056).

Re **claim 4**, Tumer et al., as modified by Lakshmikumar, teach the limitations of claim 2, as mentioned previously. Tumer et al. further teach the device according to claim 2, wherein said threshold trigger comprises a comparator (para. 0083).

Re **claim 5**, Tumer et al., as modified by Lakshmikumar, teach the limitations of claim 2, as mentioned previously. Lakshmikumar disclose the necessity for voltage-to-current converters in a

circuit. It is well known in the art that resistors serve as voltage-to-current converters. One of ordinary skill in the art would have been motivated to use a resistor as converter as is well known the circuitry art.

9. **Claim 10** is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tumer et al. (US PreGrant Publication 2003/0105397; filed November 9, 2001).

Tumer et al. disclose the apparatus of claim 1 which can be used for medical x-ray imaging. Fluoroscopy is a well known method of medical x-ray imaging (para. 0074). Therefore, it would have been obvious to one of ordinary skill in the art to use the apparatus of Tumer et al. for fluoroscopy, as is well known in the radiology art.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bonnefoy et al (US Patent No. 6,211,664) teach an apparatus for filtering out background noise of a detector (CdZnTe semiconductor) due to thermal drift and dark current and implements a threshold trigger.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yara B. Green whose telephone number is (571) 270-3035. The examiner can normally be reached on Monday - Thursday, 8am - 5pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ybg



DAVID POTA  
SUPERVISOR, PATENT EXAMINER  
TECHNOLOGY CENTER 2884